

FD111HZ-EPON User Manual

Version: v1.1

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1 Attention

1.1 Install Caution

- Do not near flammable or conductive items, high temperature, direct sunlight or moist environment, or on PC chassis, and check whether other home equipment placed around stability.
- Check the cable line. Test and confirm the ac or dc input voltage in the range of allowable, and direct current (dc) correct polarity.
- Unless the manufacturer has given permission, please use the volume and the types of the power supply with Ming products attached adapter
- To prevent lightning damage to the product, ensure the safety of the power socket and power adapter earthing end grounding. Make sure the equipment in thunderstorm weather of power supply and unplug all link.
- Equipment shall be less than 10% of the input voltage fluctuations, power plug with a refrigerator, hair dryer, electric iron not use the same socket.
- To avoid any damage to body by power socket overload, or damage to cause electric shock or fire plug, please check the power cord, if found damaged, please change immediately.
- Please place the equipment on the smooth plane and equipment cannot be placed on other items.
- Equipment work is easy to generate heat, should maintain proper cooling space in order to avoid product damage caused by overheating. Slender hole on the shell for thermal design, please keep the ventilation clean, avoid the items from the radiator into device, otherwise may cause short-circuit equipment damage or fire. Don't put the liquid on the surface of equipment.

1.2 Precautions For Use

- Please read carefully before using equipment user manual, and follow the user manual and all the matters needing attention on the product.

- Avoid eyes optical interface, in order to avoid interface laser radiation injury of eyes.
Please wear safety glasses, in order to effectively protect your eyes from damage.
Optical interface. when not in use the best sheath with optical fiber interface.
- Please shut off the equipment power When not in use.
- Please make sure the power switch is closed before plug the power supply, to avoid surge. Please be careful when remove the power supply, transformer temperature may be higher.
- For safety, please do not open the shell of equipment, especially in equipment electric.
- Unplug the power supply before cleaning equipment. Use a soft dry cloth cleaning equipment, do not use the liquid or spray.
Do not use this product connected to any electronic products unless got our engineer allow. because any wrong connection may cause electricity or fire danger.

2 Introduce

FD111HZ EPON ONT is one of the EPON optical network unit design to meet the requirement of the broadband access network. It apply in FTTH/FTTO to provide the data and video service based on the EPON network.

EPON is the latest generations of access network technology. IEEE802.3ah is the standard protocol of EPON. The EPON standard differs from other PON standards in that it achieves higher bandwidth and higher efficiency using larger, variable-length packets. EPON offers efficient packaging of user traffic, with frame segmentation allowing higher quality of service (QOS) for delay-sensitive voice and video communications traffic. EPON networks provides the reliability and performance expected for business services and provides an attractive way to deliver residential services. EPON enables Fiber To The Home (FTTH) deployments economically resulting to accelerated growth worldwide.

FD111HZ is based on ZTE high-performance xPON access chip. The chip supposes three mode: EPON/EPON/P2P, comply with the EPON standard of g.984, g.983, 802.3-2005, CTC EPON equipment technical requirements, have good xPON interoperability compatibility

FD111HZ provide one GE auto-adapting Ethernet ports. The FD111HZ features

high-performance forwarding capabilities to ensure excellent experience with Internet and HD video services. Therefore, the FD111HZ provides a perfect terminal solution and future-oriented service supporting capabilities for FTTH deployment. It has good third-party compatibility to work with the third party OLT, such as Huawei/ZTE/Fiberhome/Alcatel-Lucen.

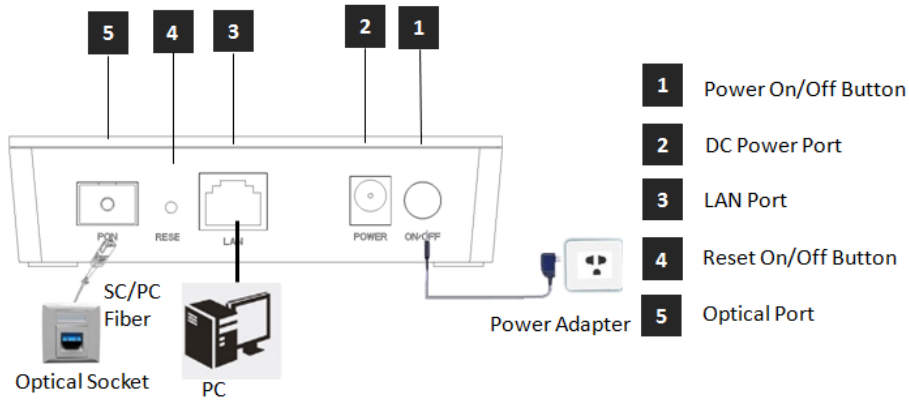
2.1 Feature

- Full compatible with IEEE802.3ah
- Support port-based rate limitation and bandwidth control
- In compliant with IEEE802.3ah Standard
- Up to 20KM transmission Distance
- Support data encryption, group broadcasting, port Vlan separation , etc.
- Support Dynamic Bandwidth Allocation (DBA)
- Support ONU auto-discovery/Link detection/remote upgrade of software;
- Support VLAN division and user separation to avoid broadcast storm;
- Support power-off alarm function ,easy for link problem detection
- Support broadcasting storm resistance function
- Support port isolation between different ports
- Support three layer routing functions
- Support ACL and SNMP to configure data packet filter flexibly
- Specialized design for system breakdown prevention to maintain stable system
- Support software online upgrading
- EMS network management based on SNMP ,convenient for maintenance

2.2 Environmental Parameter

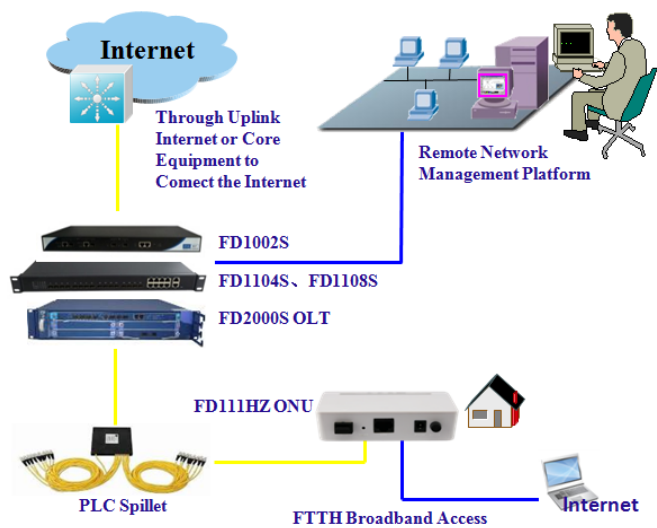
- Environmental Requirement
 - Operation temperature: $-0^{\circ}\text{C}\sim 50^{\circ}\text{C}$
 - Operation humidity: 5%—95%
- Power Specification
 - Rate voltage/ current: 12 V/0.5A
 - Power: <2W

2.3 Interface



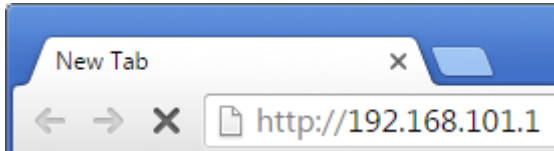
Indicator light			Introduction
1	LAN	LAN port status	On: Ethernet connection is normal; Blinking: Data is being transmitted through the Ethernet port; Off: Ethernet connection is not set up;
2	LOS	EPON optical signals	On: Optical power lower than receiver
3	PON	ONT Register	On: Success to register to OLT; Blinking: In process of registering to OLT; Off: In process of registering to OLT;
4	PWR	Power status	On: The ONT is power on; Off: The ONT is Power off;

2.4 Application

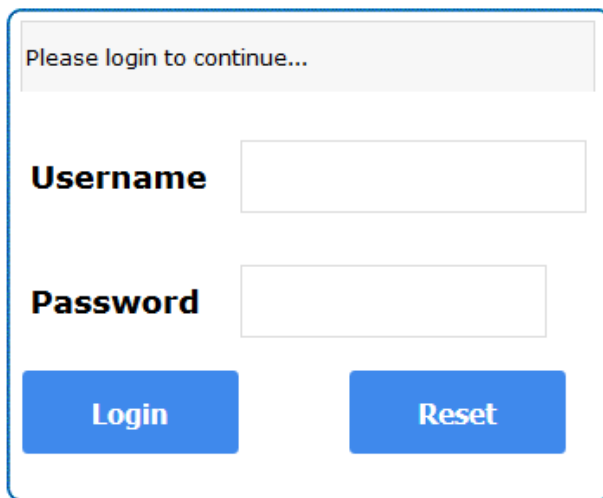


3 Login ONU web

Set computer local IP address manually to 192.168.101.100, using network cable, connect the computer with EPON ONU Ethernet ports, open a browser, copy and paste the URL: <http://192.168.101.1>



Page as shown below:



Please login to continue...

Username

Password

Login **Reset**

Input Username: **adminisp** Password: **adminisp**

Click "Login" button. Web interface of basic information as shown below:



Navigation: Status | Network | Security | Application | Administration | Help

Device Information

- Device Information
- Network Interface
- User Interface

Model	100Z
Serial Number	DB19-160324000002
Hardware Version	V1.2
Software Version	V1.1.2-X001
Boot Loader Version	V1.1.2-X001

Help **Logout**

4 Internet service configuration

4.1 PPPoE Dial-up access Internet

① Click Network ->WAN->WAN Connection, Login to the web interface as shown below:

② Connection Name choose “Create WAN Connection”, give the WAN a name(ex:internet), check “Enable VLAN”, set correct VLAN ID and 802.1P, Type is “Route”, Service List to “INTERNET”, Link Type set to “PPP”. Fill in PPPoE username and password. Other configuration keep in default. Click “Create” button.

③Click Network -> LAN->DHCP Server, Check "Enable DHCP Server", Click "Submit" button to enable the DHCP function.

The screenshot shows the DHCP Server configuration page. The left sidebar has a menu with 'WAN', 'LAN', 'DHCP Server' (selected), 'PON', 'Routing(IPv4)', and 'Port Configuration'. The main content area has a blue header with 'Status | Network | Security | Application | Administration | Help'. Below the header, there is a note: 'NOTE: 1. The DHCP Start IP Address and DHCP End IP address should be in the same subnet as the LAN IP.' The configuration fields are: LAN IP Address (192.168.101.1), Subnet Mask (255.255.255.0), Enable DHCP Server (checked), DHCP Start IP Address (192.168.101.2), DHCP End IP Address (192.168.101.254), Assign IspDNS (unchecked), DNS Server1 IP Address (192.168.101.1), DNS Server2 IP Address (empty), DNS Server3 IP Address (empty), Default Gateway (192.168.101.1), and Lease Time (86400) sec. There are 'Help' and 'Logout' buttons. Below the configuration is a table titled 'Allocated Address' with columns: MAC Address, IP Address, Remaining Lease Time, Host Name, Port. The table contains the text 'There is no data.' At the bottom right, there are 'Submit' and 'Cancel' buttons.

④Click Status->Network Interface->WAN Connection, can check the PPPoE WAN is connected or not. If the WAN get an ip address, DNS address and the Ipv4 Connection Status is Connected, mean the PPPoE dial-up is successfully. PC connect to ONU LAN port can surf the Internet.

The screenshot shows the WAN Connection status page. The left sidebar has a menu with 'Device Information', 'Network Interface', 'WAN Connection' (selected), 'PON Inform', 'PON Alarm', and 'User Interface'. The main content area has a blue header with 'Status | Network | Security | Application | Administration | Help'. Below the header, there is a table with the following data: Type (PPPoE), Connection Name (internet), IP Version (IPv4), NAT (Enabled), IP (10.0.0.27), DNS (202.96.134.33/202.96.128.86/0.0.0.0), IPv4 Connection Status (Connected), IPv4 Online Duration (7 sec), Disconnect Reason (None), and WAN MAC (e0:67:b3:44:55:66). There are 'Help' and 'Logout' buttons. At the bottom right, there is a 'Refresh' button.

ONU on the premise that registered and online, but IP and DNS without address, the IPv4 Connection Status show Disconnected.and the Disconnect Reason is "AUTHENTICATION FAILURE", Please check the PPPoE username and password. If IPv4 Connection Status is "connecting" all the time, Please check the OLT configuration.

4.2 Static IP access Internet

①Click Network->WAN->WAN Connection

The screenshot shows a web-based configuration interface with a top navigation bar containing 'Status', 'Network', 'Security', 'Application', 'Administration', and 'Help'. The 'Network' tab is active. On the left, a sidebar menu lists 'WAN', 'LAN', 'PON', 'Routing(IPv4)', and 'Port Configuration', with 'WAN Connection' selected. The main area contains the following configuration fields:

- Connection Name: Create WAN Conn (dropdown)
- New Connection Name: (text input)
- Enable VLAN: (checkbox)
- Type: Route (dropdown)
- Service List: INTERNET (dropdown)
- MTU: 1492 (text input)
- Link Type: PPP (dropdown)
- PPP section (indicated by a green up arrow):
 - Username: (text input)
 - Password: (text input)
 - Authentication Type: Auto (dropdown)
 - Connection Trigger: Always On (dropdown)
 - IP Version: IPv4 (dropdown)
 - PPP TransType: PPPoE (dropdown)
- IPv4 section (indicated by a green up arrow):
 - Enable NAT: (checkbox)

Buttons for 'Help' and 'Logout' are located on the right side of the configuration area. At the bottom of the interface, there are 'Create' and 'Cancel' buttons.

② Connection Name choose "Create WAN Connection", give the WAN a name(ex:internet2), check "Enable VLAN", set correct VLAN ID and 802.1P, Type is "Route", Service List to "INTERNET", Link Type set to "IP". IP type set to "Static". Fill in IP Address, Subnet Mask, Gateway, DNS server ip address. Other configuration keep in default. Click "Create" button.

Status | **Network** | Security | Application | Administration | Help

WAN
WAN Connection
LAN
PON
Routing(IPv4)
Port Configuration

Connection Name: Create WAN Conn
New Connection Name: internet2
Enable VLAN: Help
VLAN ID: 20
802.1p: 0 Logout
Type: Route
Service List: INTERNET
MTU: 1500
Link Type: IP
IP Version: IPv4
IP Type: Static

IPv4

Enable NAT:
IP Address: 192.168.2.99
Subnet Mask: 255.255.255.0
Gateway: 192.168.2.254
DNS Server1 IP Address: 8.8.8.8
DNS Server2 IP Address: 4.4.4.4
DNS Server3 IP Address:

Create Cancel

③Click Network -> LAN->DHCP Server, Check "Enable DHCP Server", Click "Submit" button to enable the DHCP function.

Status | **Network** | Security | Application | Administration | Help

WAN
LAN
DHCP Server
PON
Routing(IPv4)
Port Configuration

NOTE: 1. The DHCP Start IP Address and DHCP End IP address should be in the same subnet as the LAN IP.

LAN IP Address: 192.168.101.1 Help
Subnet Mask: 255.255.255.0 Logout

Enable DHCP Server:
DHCP Start IP Address: 192.168.101.2
DHCP End IP Address: 192.168.101.254
Assign IspDNS:
DNS Server1 IP Address: 192.168.101.1
DNS Server2 IP Address:
DNS Server3 IP Address:
Default Gateway: 192.168.101.1
Lease Time: 86400 sec

Allocated Address

MAC Address	IP Address	Remaining Lease Time	Host Name	Port
There is no data.				

Submit Cancel

④ Click Status->Network Interface->WAN Connection, can check the IP WAN is connected or not. If the WAN get an ip address, DNS address and the Ipv4 Connection Status is Connected, mean the IP WAN is connected. PC connect to ONU LAN port and obtain an IP address automatically can surf the Internet.

The screenshot shows the 'WAN Connection' status page. The left sidebar contains 'Device Information', 'Network Interface' (with 'WAN Connection' selected), 'PON Inform', 'PON Alarm', and 'User Interface'. The main content area displays a table of connection parameters:

Type	Static
Connection Name	internet2
IP Version	IPv4
NAT	Enabled
IP	192.168.2.99/255.255.255.0
DNS	8.8.8.8/4.4.4.4/0.0.0.0
IPv4 Gateway	192.168.2.254
IPv4 Connection Status	Connected
IPv4 Disconnect Reason	None
WAN MAC	e0:67:b3:44:55:66

Buttons for 'Help' and 'Logout' are visible on the right. A 'Refresh' button is located at the bottom right of the page.

4.3 DHCP access Internet

①Click Network->WAN->WAN Connection.

The screenshot shows the 'WAN Connection' configuration page. The left sidebar contains 'WAN' (with 'WAN Connection' selected), 'LAN', 'PON', 'Routing(IPv4)', and 'Port Configuration'. The main content area contains the following configuration options:

- Connection Name: Create WAN Conn
- New Connection Name: [Text Input]
- Enable VLAN:
- Type: Route
- Service List: INTERNET
- MTU: 1492
- Link Type: PPP
- PPP Configuration:
 - Username: [Text Input]
 - Password: [Text Input]
 - Authentication Type: Auto
 - Connection Trigger: Always On
- IP Version: IPv4
- PPP TransType: PPPoE
- IPv4 Configuration:
 - Enable NAT:

Buttons for 'Help' and 'Logout' are visible on the right. At the bottom right, there are 'Create' and 'Cancel' buttons.

② Connection Name choose "Create WAN Connection", give the WAN a name(ex:internet3), check "Enable VLAN", set correct VLAN ID and 802.1P, Type is "Route", Service List to "INTERNET", Link Type set to "IP". IP type set to "DHCP". Other configuration keep in default. Click "Create" button.

③Click Network -> LAN->DHCP Server, Check "Enable DHCP Server", Click "Submit" button to enable the DHCP function.

④ Click Status->Network Interface->WAN Connection, can check the IP WAN is connected or not. If the WAN get an ip address, DNS address and the Ipv4 Connection Status is Connected, mean the IP WAN is connected. PC connect to ONU LAN port and obtain an IP address automatically can surf the Internet.

The screenshot shows the ONU web interface with the following structure:

- Navigation Bar:** Status | Network | Security | Application | Administration | Help
- Left Sidebar:**
 - Device Information
 - Network Interface
 - WAN Connection** (selected)
 - PON Inform
 - PON Alarm
 - User Interface
- Main Content Area:**

Type	DHCP
Connection Name	internet3
IP Version	IPv4
NAT	Enabled
IP	192.168.2.61/255.255.255.0
DNS	192.168.2.254/0.0.0.0/0.0.0.0
IPv4 Gateway	192.168.2.254
IPv4 Connection Status	Connected
IPv4 Disconnect Reason	None
IPv4 Online Duration	2 sec
Remaining Lease Time	3598 sec
WAN MAC	e0:67:b3:44:55:66
- Buttons:** Help, Logout, Refresh

4.4 ONU Bridge mode access Internet

ONU work in Bridge mode in factory default. In Bridge mode, ONU no need do anything in web interface. ONU just need to set correct port vlan(ex:access, trunk) in OLT.

Note:If ONU have set to Route mode to access Internet before. Please disable LAN port DHCP function when you change the mode to Bridge.

5 ONU Management

5.1 Login Password

Click Administration->User Management, can change Administrator password and normal user's username and password.

The screenshot shows the web management interface with the following elements:

- Navigation Bar:** Status | Network | Security | Application | **Administration** | Help
- Left Sidebar:**
 - User Management (selected)
 - User Management
 - Login Timeout
 - System Management
 - Diagnosis
 - Loopback Detection
 - Led Control
- Main Content Area:**
 - User Privilege: Administrator User
 - Username:
 - Old Password:
 - New Password:
 - Confirmed Password:
- Bottom Bar:**

5.2 Reboot ONU

Click Administration->System Management->System Management, Click “Reboot” button can reboot the device.

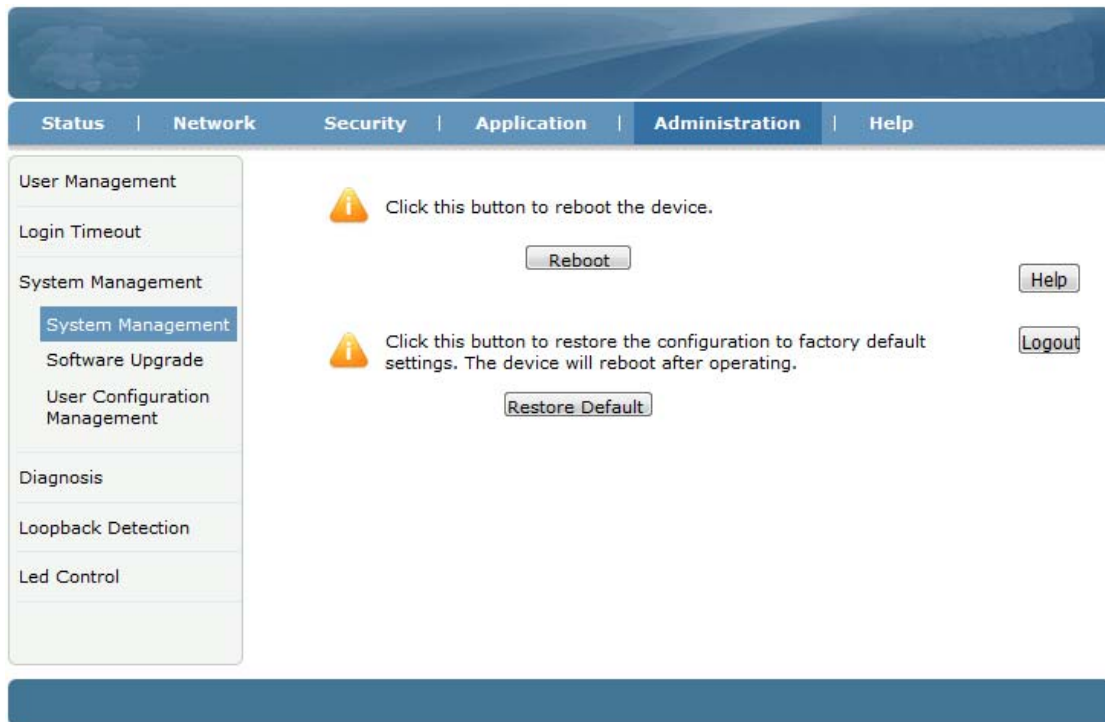
The screenshot shows the web management interface with the following elements:

- Navigation Bar:** Status | Network | Security | Application | **Administration** | Help
- Left Sidebar:**
 - User Management
 - Login Timeout
 - System Management
 - System Management** (selected)
 - Software Upgrade
 - User Configuration Management
 - Diagnosis
 - Loopback Detection
 - Led Control
- Main Content Area:**
 - Click this button to reboot the device.
 - Click this button to restore the configuration to factory default settings. The device will reboot after operating.

5.3 Restore Default

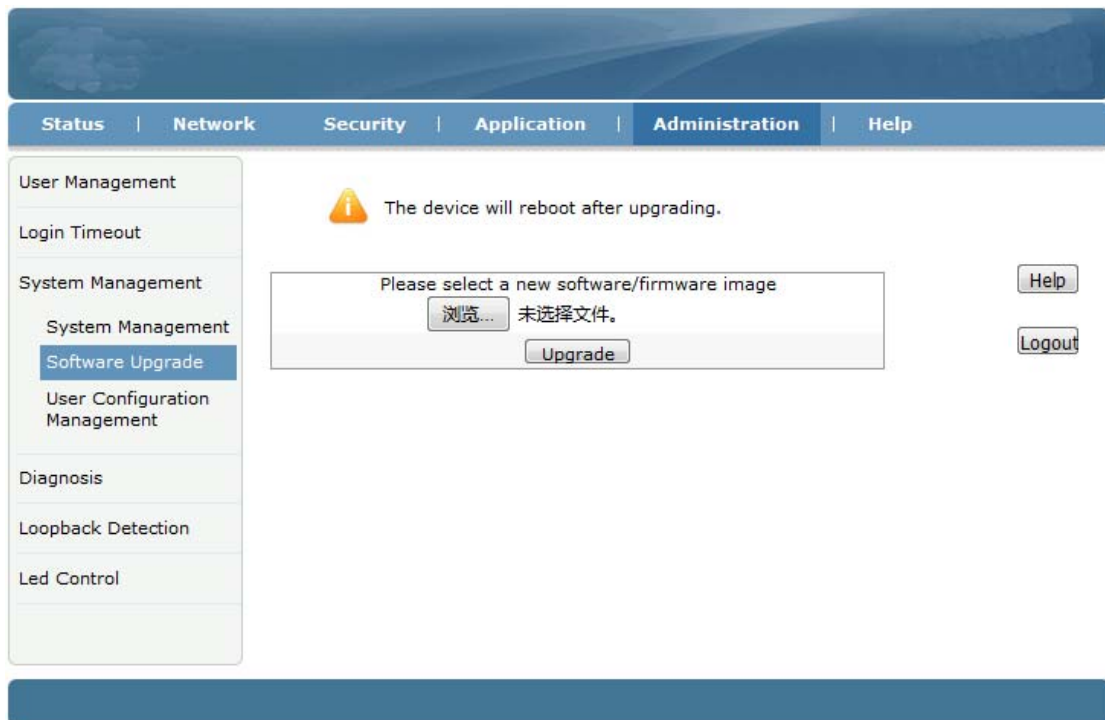
Click Administration->System Management->System Management, Click “Restore

Default" button to set ONU to factory default.



5.4 Software upgrade

Click Administration->System Management->Software Upgrade to upgrade the ONU firmware version.



5.5 Backup/Restore ONU Configuration

Click Administration->System Management->User Configuration Management, Click

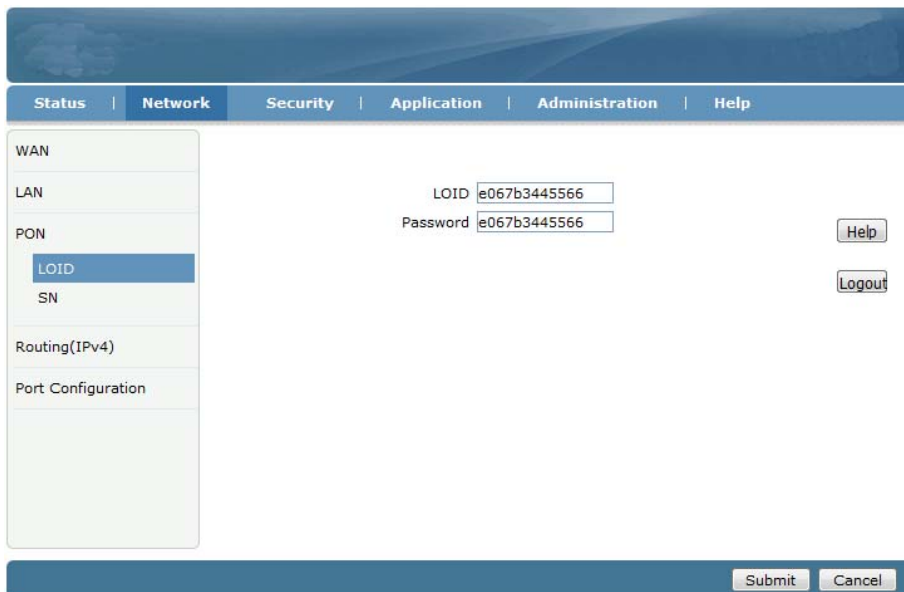
“Backup Configuration” to export configuration, Click “Restore Configuration” to import configuration.



6 Other

6.1 LOID modify

LOID use to register. In default LOID the same as ONU MAC address. Click Network->PON->LOID can view and modify LOID.



6.2 web remote management

On the premise that OLT have configured ONU management ip. Click Security->Service Control->Service Control, check "Enable", Ingress select "OAM_WAN_MNGIP", set "Start Source IP Address" and "End Source IP Address", Mode set to "Permit", check "HTTP". Click "Add" button finally.

Enable	Ingress	Start Source IP Address	End Source IP Address	Mode	Service List	Modify	Delete
✓	WAN			Permit	TELNET		

Note: If you need to configure the above remote access ports, please click on the hyperlinks below.
[Modify Remote Access Port](#)

One more item in service list as shown below:

Enable	Ingress	Start Source IP Address	End Source IP Address	Mode	Service List	Modify	Delete
✓	WAN			Permit	TELNET		
✓	OAM_WA	192.168.3.1	192.168.3.254	Permit	HTTP		

Note: If you need to configure the above remote access ports, please click on the hyperlinks below.
[Modify Remote Access Port](#)

7 Conclusion

Thanks for using CDATA Products !

Contact:

Company Address: Flat 6, Bldg 4, South 2 of Honghualing Industrial Zone, Liuxian Road, Xili Town, Shenzhen, Guangdong

Factory Address: Flat 8, Bldg 2, South 2 of Honghualing Industrial Zone, Liuxian Road, Xili Town, Shenzhen, Guangdong

Tel: 0755-26014509/26014710/26014711

Fax: 0755-26014506

Website: www.cdatic.com
www.cdatic.com.cn